

Engaging Communities to Address Climate Change:

The Alger Energy Savers Program

DECEMBER 2011







Table of Contents

Executive Summary	3
Alger County Background	4
Program Structure	4
Program Development	5
Funding and Structure Development	5
Energy Efficiency Measures Analyses	7
Communications	8
Results and Feedback	10
Recommendations	12
Useful Resources	13
Combook Information	1.4

Executive Summary

Alger Energy Savers (AES) is a community engagement program that was launched in January 2011 to educate residents and businesses about the linkage between energy use and climate change and to increase energy efficiency throughout Alger County, in Michigan's Upper Peninsula. The AES program was developed by Pictured Rocks National Lakeshore (referred to as "Pictured Rocks") and the Superior Watershed Partnership and Land Trust (referred to as "Superior Watershed Partnership"), with funding from the U.S. Environmental Protection Agency's Great Lakes Restoration Initiative. Technical analysis and implementation support were

AES: Program Profile

- Program Development Team: Pictured Rocks National Lakeshore, Superior Watershed Partnership and Land Trust
- Timeframe: January '11 September '12
- Funding & Source: \$500,000 from EPA's Great Lakes Restoration Initiative
- Estimated Emissions Savings: Over 2,200 tons CO₂e throughout lifetime of measures installed
- Website:

www.superiorwatersheds.org/energysavers.php

provided by ICF International (ICF) and Michigan Energy Options. This case study reviews the goals for the program, the program's structure and development process, successes, and recommendations for improvement.

Goals

AES established three main goals: (1) educate Alger County citizens about the science of and solutions to climate change as it affects National Parks, (2) achieve quantifiable reductions in energy use, and (3) motivate and enable Alger County citizens to pursue further energy use reductions.

Specifically, the program set objectives of visiting at least 300 homes, installing over 3,000 energy efficient measures within these homes, and providing building energy assessments, free energy efficiency measures, and matching funding to at least 50 businesses.

Development

AES was developed and implemented in two phases. Phase 1, the residential program, focused on developing and rolling out the program to the communities of Grand Marais and Munising. During Phase 2, the business program was developed and rolled out to the business community of Alger County and the residential program was expanded to include residents throughout Alger County. Both the residential and business programs targeted the communities of Grand Marais and Munising in Alger County and then expanded to engage the general county population. Grand Marais and Munising were chosen as the focus communities because of the role that they play as "gateway communities" for visitors to Pictured Rocks National Lakeshore, a unit of the National Park Service.

Results

Over 10 months, the AES residential program visited 305 homes, or 11% of Grand Marais and Munising residences, installed over 3,100 energy efficiency measures in Alger County residents' homes, and inspired almost 95% of participants to either take, or plan to take, next steps to improve their home energy efficiency. The AES business program provided energy assessments for 30 businesses and distributed over 520 free energy efficiency measures and \$20,600 of matching funding to motivate businesses to take further energy efficiency steps. Residential participants found the program to be both well implemented and informative, giving the program an average rating of 4.84 and 4.23 out of 5 respectively in follow up surveys completed.

Alger County Background

Set on the shores of Lake Superior, Alger County is already experiencing the impacts of climate change. Ecological impacts on the Great Lakes and the surrounding regions include declines in lake winter ice, lowering of lake levels, higher summer temperatures, shifts in landscape vegetation and habitat, loss of cold water fish populations, changes in timing of seasonal events, and altered distribution of insects, amphibians, and mammalian wildlife. Impacts such as lower lake levels will require changes to existing infrastructure such as docks and ports and may affect the recreation and tourism industries in Alger County.

A study conducted in 2010 by a graduate student at George Mason University (GMU) assessed Alger County energy use patterns and opinions about climate change. This study revealed that the spread of opinions about climate change in Alger County ranged from alarmed to dismissive of the concept and its importance, which closely

Gateway Communities at a Glance

- A "Gateway Community" is a community that serves as the entry point to a National Park. Often, these communities and the parks are dependent on one another for recreational, economic, environmental, and community engagement purposes.
- Total number of households in Grand Marais and Munising: 1,760
- Total number of businesses in Grand Marais and Munising: 450
- Percent of Grand Marais and Munising residents disengaged with or skeptical of climate change: 37%
- Percent of Grand Marais and Munising residents more likely to make energy efficiency improvements if given financial assistance: Over 70%

mirrored the national distribution of opinions in a continuing suite of studies titled "Six Americas." The GMU study found that while almost half (46%) of the Alger County population is motivated by and concerned about climate change, and a significant portion of the population can be categorized as disengaged, doubtful, or dismissive (37%).

Simultaneously, significant and rising energy costs are causing financial distress for households and businesses throughout the County. Energy efficiency and conservation efforts stand to save individuals and businesses money, while addressing climate change and improving the environment. To achieve these benefits, the AES program educated citizens and businesses about climate change, its connection to energy use, and the potential to save money and help the environment and National Parks by reducing energy use.

Program Structure

Both the residential and business programs had similar structures that involved (1) a brief energy assessment of the building to identify opportunities to reduce energy use, (2) a report (both verbal and written) about opportunities for energy reduction, (3) a discussion regarding why energy efficiency is important for both economic and environmental reasons, (4) free basic energy efficiency measures, and (5) a financial incentive to take next steps beyond the basic free energy efficiency measures. The detailed structures of the residential and business programs are presented below. All visits to both residences and businesses were administered by the Superior Watershed Partnership and conducted by Michigan Energy Options.

Residential

The program provided free home energy visits (or "walk-through assessments"), free energy efficiency products, and financial incentives to take further steps to improve energy efficiency.

Each visit involved (1) a walk-through assessment during which potential energy saving opportunities were identified and a maximum of 10 energy saving products were installed and (2) a "kitchen table chat." During the walk-through assessment, the contractor and the homeowner briefly toured the home, and the contractor identified opportunities to improve energy efficiency and installed energy saving products from a standard suite of products on hand. The kitchen table chat included a discussion with each homeowner about the findings of the home energy assessment, a review of annual energy bills, potential next steps to reduce energy use, and a \$10 voucher toward the purchase of a selected set of energy efficiency measures at participating local hardware stores. During the chat, the contractor reviewed both the list of opportunities to reduce energy, which were included on a worksheet left with the participant, and a list of local energy efficiency programs that offer support pertinent for each homeowner's next steps.

Business

The program provided a free brief building audit (or "walk-through assessment"), free energy efficiency products, and financial incentives to take further steps to improve energy efficiency.

Each visit involved (1) a walk-through assessment of potential energy saving opportunities, and (2) the provision of up to \$100 of free energy saving products including low- and high-wattage compact fluorescent light bulbs, low-flow showerheads, faucet aerators, low-flow sprayers, and smart power strips that the business was expected to install. After the visit, the AES program delivered a report to the business that detailed the energy saving opportunities found, their financial and environmental benefits, and classified the opportunities as either as (1) "Baseline" energy efficiency measures or (2) "Next Step" opportunities. If the business was interested in becoming more energy efficient, it was eligible to

receive 50% matching funding up to \$2,500 for costs related to both products and installation of these "Next Step" energy efficiency measures.

"Next Step" Funding Structure

- Businesses interested in taking further steps to become energy efficient were eligible for 50% matching funding for product and installation costs.
- Funding contributions were capped at \$2,500.
- Example: The Alger Hotel is interested in replacing one boiler and a range of lighting fixtures with a total product and installation cost of \$5,000. The AES program would pay \$2,500 and the business would pay the remaining \$2,500.
- Funding stipulations:
 - the business must have installed all free measures provided, which is ensured by an inspection by AES
 - 2. the business must pay at least 50% of the costs

Program Development

Funding and Structure Development

Core to the National Park Service's mission are the preservation of natural and cultural resources for future generations and engagement of the public. In 2009, in line with these tenets of its mission, Pictured Rocks became interested in developing an education program that would complement its existing efforts around climate change to its gateway communities. This effort was an extension of its "Climate Friendly Parks" initiative begun in 2006. To create this program would require significant financial and staffing resources. In early 2009, the Environmental Protection

ASE STUD

Agency issued its initial call for proposals for the Great Lakes Restoration Initiative. Pictured Rocks applied for funding through the Initiative and when the grant was awarded in 2009, the Park approached Superior Watershed Partnership about serving as a partner in the development and implementation of the program. Among many benefits of this partnership were the facts that Superior Watershed Partnership was a trusted organization in the community with a history of implementing effective energy efficiency and educational programs, and that Pictured Rocks was a recognized leader in sustainable operations and climate change outreach. These two entities would create an educational program that engaged the public in strategies to address climate change, and would serve as a model for other communities throughout the US. The program would leverage both entities' roles and networks in the community and would utilize state of the science communications methods to engage the public.

In 2010, this funding enabled the creation of the AES program with three main goals: (1) educate Alger County citizens about the science of and solutions to climate change, (2) achieve quantifiable reductions in energy use, and (3) motivate and enable Alger County citizens to pursue further energy use reductions. To achieve these goals within the context of Alger County, Pictured Rocks and Superior Watershed Partnership, with the support of ICF, identified four key aspects of program implementation that drove the development of both the residential and business programs' structure: (1) a focus on educating participants, (2) reduced barriers to participation in the program and to taking further energy efficiency actions, (3) efficient use of existing energy efficiency programs, and (4) a concentrated, but community-wide effort.

This unique set of four program aspects, which include both education and efficiency measure implementation, required developing an energy efficiency program structure that combines three standard programs into one unique format. AES's program combines (1) a program in which utilities bring the efficiency into residents' homes to lower barriers to participation, (2) an educational program structure that engages participants and enables them to take further action, and (3) the standard utility incentive program to support further energy efficiency measures.

The components of the residential and business programs, and how they relate to the four key aspects of project implementation, are discussed below.

Educating Participants

AES placed significant emphasis on educating citizens and businesses about the personal and environmental benefits of energy efficiency, the range of opportunities to increase their energy efficiency, and other programs available to help them improve their efficiency. This "teach a person to fish" approach to the program was established to develop an understanding of the issues throughout the community that will last beyond the short duration of the program itself.

The residential program structure, as described earlier, included both a walk-through at the beginning of the home visit, and a "kitchen table chat" at the end of the visit. Both of these components enabled educational discussion of (1) what was installed, (2) the list of potential next steps identified, (3) other programs available to support these next steps, and (4) the positive environmental impact of energy efficiency. This discussion culminated with a review of available climate change related literature.

The business program structure, as described earlier, included both a walk-through assessment and a formal report, based on this assessment. This report added depth and formal structure to the information conveyed during the walk-through assessment by detailing the energy saving opportunities found, their financial and environmental benefits, and classifying them as either "Baseline" energy efficiency measures or "Next Step" opportunities. As with the residential program, a representative from the business' management team was required to be present during the walk-through assessment to enable on-site and hands-on learning opportunities.

Lower Barriers to Entry

To ensure that the program was open and appealing to all members of the community, AES designed the process of participation to be simple and incentivized. Both the residential and business programs had minimal stipulations for participation and included a number of incentives to participate throughout the duration of the program. The only requirements for participation for both programs were (1) being a resident or business in Alger County, (2) being present for the home or business visit, and (3) agreeing to participate in a follow-up survey. Incentives for participation in the residential program included gaining an understanding of how to lower energy bills, up to 10 free energy efficient products, a \$10 voucher for homeowners to further their energy efficiency efforts, and entry into a raffle to receive a free energy efficient appliance. The business program included gaining an understanding of how to lower energy bills, \$100 of free energy efficient products, up to \$2,500 of support for further energy efficiency measures, and free communications materials to let customers know about the business' sustainable efforts.

Leveraging Existing Efficiency Programs

There were a number of existing programs in Alger County that offered financial support through rebates for residents. To ensure most effective utilization of government funding and to reduce barriers to future participant action, AES integrated educational content that leveraged these programs by introducing participants to other pertinent programs. These programs were highlighted during the educational discussions as indicated above.

Engage Entire Communities

AES decided to engage all of Munising and Grand Marais (the gateway communities) to create examples of sustainable communities for visitors to the park, and the rest of Alger County. As discussed above, the program employed a phased approach to the geographic roll-out of the initiative. During Phase 1, the residential program was developed and rolled out to two key communities, Munising and Grand Marais. During Phase 2, the business program was developed and rolled out with the residential program to both Munising and Grand Marais, and the rest of the county.

Energy Efficiency Measure Analyses

To ensure that funding was used effectively in purchasing energy efficiency measures, the AES program conducted an analysis of over 50 measures to identify products that would be distributed to both residents and businesses. The analysis examined metrics including:

- potential energy savings
- incremental cost per product
- ease of installation
- market needs
- safety

Based on this analysis, five measures were chosen for both the residential and business programs to install for free during the home or business visit. Residential program measures included: low-flow faucet aerators for both kitchen and bathroom

Free Residential Measures

- Low-flow faucet aerators
- Low-flow showerheads
- Hot water heater wraps
- Compact fluorescent lighting (both 13 watt and 20 watt)
- Pipe insulation

Free Business Measures

- Compact fluorescent lighting (coil and highwattage lamps)
- Low-flow faucet aerators
- Low-flow showerheads
- Smart power strips
- Water-saving pre-rinse sprayers (for restaurants)

faucets, low-flow showerheads, hot water heater wraps, compact fluorescent lighting (both 13 watt and 20 watt), and pipe wrap. Business program measures included: compact fluorescent lighting (coil and high-wattage lamps), low-flow faucet aerators, low-flow showerheads, smart power strips, and water-saving pre-rinse sprayers (at restaurants only). Following this analysis, the program developed one Excel-based calculator for both the residential and business programs to enable the tracking of installed measures and link estimates of resulting energy and GHG emissions savings.

Communications

The communications strategy developed included (1) a broad "web" of communications collateral to build program and brand awareness, (2) staff engagement on the ground to access participants through trusted networks, and (3) incentives that developed program awareness and motivated participation in the program. The combination of these three strategy components was created specifically to address the context of Alger County, which is a small and closely knit community with a range of views on climate change. In this setting, personal on-the-ground presence of program staff to build trust in the program was resource-intensive, but crucial to participation. The development and implementation of the communications efforts for the residential and business programs ran in the same phased approach, as described above. The communication strategy is described below.

Communications Team

In addition to the core team that Pictured Rocks and Superior Watershed Partnership used to run the program, a Park Ranger was hired to serve as the on-the-ground staff. This Park Ranger's duties included raising awareness of the program both within and outside of the Park. This role was central to creating a face and a name for the program within the community, as described in the "on-the-ground" sections below.

Web of Collateral Materials

A variety of collateral materials and communications channels were developed in an effort to touch every resident at least three times. These communication materials were prepared for the residential and business programs and included flyers, postcards, and table tents. Traditional media (e.g., radio and television) avenues were utilized as well as online media such as the program's website and social media (e.g., Facebook and Twitter). Traditional materials were mailed and/or handed out to residents and businesses, and the program's website was developed to serve as a repository of information.

On-the-Ground Residential Efforts

To build trust in and support for the program throughout the community, AES reached out to residents through every personal forum possible. The Park Ranger made contact with and developed the support of local groups through presentations and question-and-answer sessions at local community group meetings and public

Consistent Branding

 Three variations of the Alger Energy Savers logo enabled consistent, but targeted, marketing and communications efforts.



Engaging Businesses

 Participating businesses were given this logo to place on their websites, and table tents to display describing their engagement in the program.



Social media

 The Alger County Chamber of Commerce posted a note on their website and Facebook page entitled "Alger Energy Savers—it's for businesses too!" forums such as annual summer fairs and places where residents routinely gather, including the post office and grocery store. Groups engaged included the Township Board, the community Senior Center, Lions Club, Kiwanis, and the Rotary Club. During the school year, the Park Ranger also presented AES information during teacher staff meetings and to high school students in conjunction with climate change programs.

On-the-Ground Business Efforts

The strategy and communication efforts for the business program mirrored those of the residential program. The main businesses that were targeted were tourism-related to increase awareness among both the business community as well as the tourist population. These businesses included motels, hotels, restaurants, cafés, and sports stores throughout Alger County. In addition to visiting local business-related community groups including Chambers of Commerce and development associations, AES was able to focus attention on each business. To do so, the Park Ranger went to each business handing out flyers, speaking to owners about the program, and providing an opportunity for them to sign up to receive an assessment.

Incentives to Join Up and Spread the Word

AES provided two incentive programs for participants to both motivate individuals and businesses to participate and to spread the word about the program. The first program was a raffle in which residents were entered after participating in the program and had the opportunity to win Energy Star appliances. The second program was developed specifically to catalyze engagement in the residential program and gave current participants \$10 for each new participant (up to five participants) that they referred once they received an energy assessment.

Results and Feedback

Overall		
335 homes & businesses visited	■ Estimated 2,205 tons CO ₂ e reduced	
Over 3,700 free efficiency measures installed	Estimated \$35,020 yearly energy bill cost reduction	
Residential program	Business program	
Residential program Goal: 300 homes	Business program Goal: 50 businesses	
Goal: 300 homes	· •	
	Goal: 50 businesses	

Over 10 months, the residential program reached every Grand Marais and Munising home, as well as many homes in greater Alger County, with communications and outreach efforts. Throughout Alger County, 305 homes participated in the program, and of these homes, 190 were located in Grand Marais or Munising, representing 11% of those communities. The business program had 30 businesses participate over five months, ¹ of which 19 were located in Grand Marais or Munising.

In alignment with the goals of the program, AES monitored results in three key areas and gathered participant feedback through a follow-up survey given to each participant. Key results areas included:

- Degree of education: How much did participants learn about energy efficiency and how satisfied were they with the visit?
- Number of measures installed: What was the measureable impact of the program?
- Motivation: How many participants took further steps to improve efficiency?

Results in each area and general program feedback are discussed in detail below.

Education

Degree of education was measured by participation and softer measures such as participant feedback. Because each visit for both residential and business participants involved a discussion of energy efficiency and its link to saving money and addressing climate change, overall level of participation can be viewed as one metric for degree of education. As discussed above, AES held these discussions with 305 homes and 30 businesses.

Feedback

- "Knowing where to look for bad places within the house was found to be most useful."
- "Liked how thorough it was, informative, and how the information was easy to understand."
- "Liked everything about the visit and has recommended it to many friends!"

In a survey implemented following residential visits, participants rated the AES program's visit on (1) its degree of educational value from 1-5,

¹ Because the business program was begun in Phase 2 of the program, at the time of development of this Case Study, the business program had been operational for only five months.

with a 1 being "confusing" and a 5 being "very educational," and (2) level of satisfaction, again from 1-5, with a 1 being "disappointed" and a 5 being "very happy." Participants found the program to be both well implemented and informative with average scores of 4.84 and 4.23 respectively.

Installation

The number of energy efficiency products installed was measured for both the residential and business programs. Throughout 305 home visits, the AES program installed 3,194 energy efficiency measures, resulting in an estimated 1,783,000 kWh saved over the lifetime of the products and an estimated carbon abatement of 2,054 tons. Over the lifetime of these measures, AES estimates that residents will save \$320,900.

The most installed measures in the residential program were the CFL light bulbs (1,963 bulbs), followed by low-flow faucet aerators in the bathrooms and kitchens (565 aerators).

Throughout 30 business visits,² the AES program delivered 527 free energy efficiency measures for businesses to install, resulting in an estimated 124,430 kWh saved over the lifetime of the products and an estimated carbon abatement of over 150 tons. Over the lifetime of these measures, AES estimates that businesses will save \$9,100.

The most installed measures in the business program were coil CFL light bulbs (234 bulbs), faucet aerators (170 aerators), and low-flow showerheads (103 heads).

Motivation

Of the households which received home visits, 27 households (9% of participants) reported using the program's voucher to further their energy efficiency efforts. These participants reported installing 52 further measures.

Of the businesses which received visits, 13 businesses (43% of participants) used the program's matching funding to further their energy efficiency progress.

Projected Energy Savings

Over the lifetime of these measures, AES estimates that residents and businesses will save:

- **\$330,000**
- 2,205 tons CO₂e
- Equivalent to taking 381 cars off the road for one year

² Because the initial set of products for the business program was handed out but not directly installed by AES, this case study assumes 100% installation by the businesses but cannot be certain of this rate of achievement.

Recommendations

Measuring Success: A thorough follow-up survey of the county's knowledge of and views on climate change and energy efficiency mirroring the study completed in 2010 would enable a better understanding of the impact of the AES program on the community's views at large.

Measuring Communications: Developing a more formal and continuous system for understanding how a participant heard about the program would enable program developers to utilize multiple channels of communications and therefore place more resources on those that work as the program evolves.

Keeping It Local: Utilizing local contractors and members of respected local organizations—such as rangers from the National Park Service and staff from the Superior Watershed Partnership—to interact with residents and businesses allows a program to quickly build trust in a small community. This trust is a crucial element when implementing a program that requires entering homes and businesses.

Building a Network: Engaging community members through their networks is crucial to building trust in and awareness of a program efficiently. Personal communication with local resident, government, and business groups quickly develops champions throughout the community.

Identifying Roles & Responsibilities: Developing small, community-scale programs through coordination of several local entities is a powerful and replicable model, but this model requires open communication and thorough planning of each entity's roles and responsibilities to ensure funding is spent efficiently and effectively.

Useful Resources

- Alger Energy Savers program website: http://superiorwatersheds.org/energysavers.php
- American Council for an Energy Efficient Economy: http://www.aceee.org/
- Assessing Household Energy Use and Global Warming Opinion: Alger County 2010 by
 Karen Akerlof, September 2010.
 http://www.climatechangecommunication.org/images/files/Alger County Survey 2010(2)

).pdf
- Global Warming's Six Americas, May 2011 Lieserowitz, A. et al., May 2011. http://environment.yale.edu/climate/files/SixAmericasMay2011.pdf
- Lawrence Berkeley National Laboratory's website with case studies devoted to program's for home energy efficiency: http://drivingdemand.lbl.gov/
- Superior Watershed Partnership and Land Trust website: http://superiorwatersheds.org/
- Pictured Rocks National Lakeshore website: http://www.nps.gov/piro/

Contact Information

This case study was developed by the Alger Energy Savers program with contributions from Gregg Bruff, Pictured Rocks National Lakeshore; Natasha Koss and Carl Lindquist, Superior Watershed Partnership and Land Trust; Kerry Cebul, Asher Burns-Burg, and Sarah Biggar, ICF International.

Contact Information:

Alger Energy Savers:

Gregg Bruff

Pictured Rocks National Lakeshore Chief of Heritage Education 906.387.2607 Ext. 208 gregg_bruff@nps.gov

Natasha Koss

Superior Watershed Partnership and Land Trust Program Manager 906.228.6095 Ext. 14 Natasha@superiorwatersheds.org

This Report was developed by Kerry Cebul, Asher Burns-Burg, and Sarah Biggar of ICF International. Please contact Beth A. Binns at bbinns@icfi.com for further information.





